

In re Application of:

Su et al.

Application No.: 10/749,528

Filed: December 30, 2003

Page 11

PATENT

Atty Docket No.: INTEL1210 (P18026)

### **REMARKS**

The Advisory Action indicates that the Response filed on October 17, 2005 was entered but did not place the application in condition for allowance for the reasons stated in the previous Final Office Action dated August 15, 2005. The present response is being filed in conjunction with a Request for Continued Examination (RCE).

Claim 26 has been canceled without prejudice or disclaimer. Claims 23 and 38 have been amended. New claims 39-58 have been added. Subsequent to the entry of the present amendment, claims 2-25, 27-33 and 38-58 are pending and at issue. These amendments and additions add no new matter as the claim language is fully supported by the specification and original claims.

#### **I. Rejections under 35 U.S.C. §112, Second Paragraph**

Claims 2-33 and 38 were rejected in the Final Office Action under 35 U.S.C. §112.

The Advisory Action states that the Applicants prior response overcame this rejection.

#### **II. Rejections under 35 U.S.C. §103**

A. The Advisory Action maintained the rejection of claims 2-5, 10, 14-17, 20-26, 29-33 and 38 under 35 U.S.C. §103(a) as allegedly obvious over Natan et al. (US 6,579,721) in view of Carron (US 5,693,152). This rejection is respectfully traversed.

In the Response to the Final Office Action dated August 15, 2005, Applicants argued that the teachings of Natan are limited to physical separation of a sample into smaller portions or allotments, such as by distributing or allotting portions of a sample into individual microwells that are not fluidically connected. Natan contemplates dividing a sample into smaller volume allotments, which are each distributed into an array of microwells for the purpose of conducting

In re Application of:

Su et al.

Application No.: 10/749,528

Filed: December 30, 2003

Page 12

PATENT

Atty Docket No.: INTEL1210 (P18026)

separate chemical reactions in the individual microwells. While the samples of Natan are divided into allotments of smaller volume and distributed into individual microwells, the proteins in the sample are not in any way distinguished from each other prior to separation.

In the present Advisory Action, the Examiner disagreed with Applicants assessment of Natan stating “the protein ligands immobilized to the of Natan et al. are capable of binding to target proteins and must be separated from a sample and distinguished from each other prior to immobilization in order to determine which ligand is bound at specific locations. Furthermore, the ligands specific for different target analyte at specific locations must be separated before immobilization to the substrate (col. 3, lines 23-27; col. 10, lines 38-57).”

Applicants respectfully disagree with the Advisory Action interpretation of Natan. A review of the first cited passage of Natan is directed to detection with an imaging SPR instrument that “would be integral in the simultaneous detection of multiple target analytes using a solid support to which ligands of different target analytes are attached at specific locations.” (col. 3, lines 23-27) The second cited passage is directed to biosensing assay formats in which Ligand A is immobilized on a solid support (col. 10, lines 38-57). Neither of these cited passages appears to disclose the deposition of proteins and protein fragments at discrete location on a solid substrate to create a plurality of discrete protein enriched locations, as required in claim 38.

In the Response to the Final Office Action dated August 15, 2005, Applicants further argued that Carron failed to teach chromatographically separating proteins and protein fragments in the sample into a plurality of fractions.

In the present Advisory Action, the Examiner disagreed with Applicants assessment of Carron stating that “the chromatographic technique of Carron separates components to be

In re Application of:

Su et al.

Application No.: 10/749,528

Filed: December 30, 2003

Page 13

PATENT

Atty Docket No.: INTEL1210 (P18026)

analyzed into aliquots to allow for powerful chemical analysis methods to be applied to each component. Therefore, each aliquot of Carron has an individual component and each component is separated from one another. Although Carron does not specifically teach a plurality of fractions, a plurality of aliquots, each containing a component is formed by the chromatographic separation technique of Carron, and the aliquot is therefore a fraction containing an individual component. Therefore, chromatographic separation of protein ligands of Natan et al, forms fractions containing individual protein ligands to be deposited at individual locations.”

Applicants respectfully disagree with the Advisory Action interpretation of Carron. Carron discloses that the “chemical structure of the components can be ascertained by an on-line technique capable of structural determination by timed collection of aliquots of material being separated” (Carron, col. 3, lines 62-65). Nowhere is it disclosed that Carron teaches “chromatographically separating proteins and protein fragments in the sample into a plurality of fractions” nor does it teach that “each fraction containing an individual protein or protein fragment”, as required in claim 38.

For at least for the reasons set forth above, it is submitted that the cited references, either separately or in combination, fail to teach or suggest all of the claim limitations. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

**B.** The Advisory Action maintained the rejection of claims 6-9 under 35 U.S.C. §103(a) as allegedly obvious over Natan et al. (US 6,579,721) in view of Carron (US 5,693,152), as applied to claim 38, further in view of Grow (US 6,040,191). This rejection is respectfully traversed.

As discussed above, Applicants have shown that Natan et al. and Carron fail to teach each and every element of claim 38. Claims 6-9 ultimately depend upon claim 38. Claims 6-9 should be allowable for at least those same reasons discussed above. The addition of Grow does

In re Application of:

Su et al.

Application No.: 10/749,528

Filed: December 30, 2003

Page 14

PATENT

Atty Docket No.: INTEL1210 (P18026)

not provide the teachings that are missing from Natan et al. and Carron to render the invention obvious, and the combination of them does not disclose or suggest every limitation of claims 6-9. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

C. The Advisory Action maintained the rejection of claims 11-13 under 35 U.S.C. §103(a) as allegedly obvious over Natan et al. (US 6,579,721) in view of Carron (US 5,693,152), as applied to claim 38, further in view of Avseenko et al. (Immobilization of Proteins in Immunochemical Microarrays Fabricated by Electrospray Deposition, Analytical Chemistry, 2001, 73, 6047-6052). This rejection is respectfully traversed.

As discussed above, Applicants have shown that Natan et al. and Carron fail to teach each and every element of claim 38. Claims 11-13 ultimately depend upon claim 38. Claims 11-13 should be allowable for at least those same reasons discussed above. The addition of Avseenko et al. does not provide the teachings that are missing from Natan et al. and Carron to render the invention obvious, and the combination of them does not disclose or suggest every limitation of claims 11-13. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

D. The Advisory Action maintained the rejection of claims 18 and 19 under 35 U.S.C. §103(a) as allegedly obvious over Natan et al. (US 6,579,721) in view of Carron (US 5,693,152), as applied to claim 38, further in view of Storhoff et al. (US 2004/0053222). This rejection is respectfully traversed.

As discussed above, Applicants have shown that Natan et al. and Carron fail to teach each and every element of claim 38. Claims 18 and 19 ultimately depend upon claim 38 (through claim 17). Claims 18 and 19 should be allowable for at least those same reasons discussed above. The addition of Storhoff et al. does not provide the teachings that are missing

In re Application of:

Su et al.

Application No.: 10/749,528

Filed: December 30, 2003

Page 15

PATENT

Atty Docket No.: INTEL1210 (P18026)

from Natan et al. and Carron to render the invention obvious, and the combination of them does not disclose or suggest every limitation of claims 18 and 19. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

E. The Advisory Action maintained the rejection of claims 27 and 28 under 35 U.S.C. §103(a) as allegedly obvious over Natan et al. (US 6,579,721) in view of Carron (US 5,693,152), as applied to claim 38, further in view of Nelson et al. (US 5,955,729). This rejection is respectfully traversed.

As discussed above, Applicants have shown that Natan et al. and Carron fail to teach each and every element of claim 38. Claims 27 and 28 ultimately depend upon claim 38. Claims 27 and 28 should be allowable for at least those same reasons discussed above. The addition of Storhoff et al. does not provide the teachings that are missing from Natan et al. and Carron to render the invention obvious, and the combination of them does not disclose or suggest every limitation of claims 27 and 28. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

### III. New claims

New claims 39-58 have been added and are directed to an alternate embodiment that was previously pending in claim 38. Claim 38 previously included two embodiments, namely, depositing each fraction (1) “at a discrete location on a solid substrate” or (2) “within at least one stream of flowing liquid in a microfluidic system” to create a plurality of discrete protein enriched locations. The Office Actions and Advisory Action rejected claim 38 based on the embodiment “depositing each fraction at a discrete location on a solid substrate”. Applicants have amended claim 38 to this first embodiment and argue allowability above.

In re Application of:

Su et al.

Application No.: 10/749,528

Filed: December 30, 2003

Page 16

PATENT

Atty Docket No.: INTEL1210 (P18026)

New claim 39 is the same as claim 38 except it is directed to the second embodiment, namely, "depositing each fraction at a discrete location within at least one stream of flowing liquid in a microfluidic system to create a plurality of discrete protein enriched locations". This embodiment should be allowable over the prior art. New dependent claims 40-58 are similar to claims 2-5, 15, 17, 21-33 and also should be allowable. These new claims add no new matter as the claim language is fully supported by the specification and original claims.

In re Application of:

Su et al.

Application No.: 10/749,528

Filed: December 30, 2003

Page 17

PATENT

Atty Docket No.: INTEL1210 (P18026)

**IV. Conclusion**

In view of the above amendments and remarks, reconsideration and favorable action on all claims are respectfully requested. In the event any matters remain to be resolved, the Examiner is requested to contact the undersigned at the telephone number given below so that a prompt disposition of this application can be achieved.

Applicants submit a check in the amount of \$1240.00 for the RCE fee (\$790) and the Two-Month Extension of Time fee (\$450/large entity) and do not believe any other fees are due in connection with this Response. However, the Commissioner is hereby authorized to charge any additional fees, or make any credits, to Deposit Account No. 07-1896, referencing the above-identified attorney docket number. A copy of the Transmittal Sheet is enclosed.

Respectfully submitted,



Date: January 17, 2006

Lisa A. Haile, J.D., Ph.D.

Registration No. 38,347

Telephone: (858) 677-1456

Facsimile: (858) 677-1465

DLA PIPER RUDNICK GRAY CARY US LLP  
ATTORNEYS FOR INTEL CORPORATION  
4365 Executive Drive, Suite 1100  
San Diego, California 92121-2133  
**USPTO Customer No. 28213**